

VINYL CHLORIDE

Also known as: Chlorethylene, Chlorethene, Ethylene monochloride, Monochloroethene, VC
Chemical reference number (CAS): 75-01-4

WHAT IS VINYL CHLORIDE?

Vinyl chloride is a colorless flammable gas that evaporates very quickly. It's used to make polyvinyl chloride (PVC) pipes, wire coatings, vehicle upholstery, and plastic kitchen ware. Higher than normal levels of vinyl chloride may be present inside new cars as the chemical evaporates from new vinyl products.

Vinyl chloride can be formed in the environment when soil organisms break down "chlorinated" solvents. In the environment, the highest levels of vinyl chloride are found in air around factories producing vinyl products. Vinyl chloride that is released by industries or formed by the breakdown of other chlorinated chemicals can enter the air and drinking water supplies. Vinyl chloride is a common contaminant found near landfills.

HOW ARE PEOPLE EXPOSED TO VINYL CHLORIDE?

Breathing: Most exposure to vinyl chloride occurs when people breathe contaminated air. If a water supply is contaminated, vinyl chloride can enter household air when the water is used for showering, cooking or laundry.

Drinking/Eating: People can be exposed to vinyl chloride if they drink or cook with contaminated water.

Touching: Vinyl chloride can be absorbed through the skin. This can occur when people handle vinyl products, contaminated soil, or bathe in contaminated water. However, skin absorption is probably a minor route of exposure.

DO STANDARDS EXIST FOR REGULATING VINYL CHLORIDE?

Water: The state drinking water standard for vinyl chloride is 0.2 parts per billion (ppb). We suggest you stop drinking water containing more than 0.2 ppb. If levels of vinyl chloride are above 2 ppb, avoid washing or bathing with it. You may still use the water to flush toilets. Contact your local public health agency for more information specific to your situation.

Air: No standards exist for the amount of vinyl chloride allowed in the air of homes. Most people can't smell vinyl chloride until the level is greater than 10 ppm. If you can smell the chemical, the level is too high to be safe.

The Wisconsin Department of Natural Resources regulates the amount of vinyl chloride that can be released by industries.

WILL EXPOSURE TO VINYL CHLORIDE RESULT IN HARMFUL HEALTH EFFECTS?

Vinyl chloride is very toxic. People should avoid contact with this chemical. The following health effects can occur after several years of exposure to vinyl chloride:

- Damage to the nervous system
- Changes in the immune system

Cancer: Exposure to vinyl chloride may increase a person's risk of developing cancer. Human and animal studies show higher rates of liver, lung and several other types of cancer.

Reproductive Effects: People exposed to levels of 1,000 ppm or more in air may have an increased risk of miscarriage and birth defects. Damage to male sperm-producing organs has occurred in laboratory animals.

Organ Systems : Being exposed to vinyl chloride can affect a person's liver, kidney, lung, spleen, nervous system and blood.

Bone : Long-term exposure to high levels of vinyl chloride can result in a decrease in bone strength in fingers, arms, and joints.

In general, chemicals affect the same organ systems in all people who are exposed. However, the seriousness of the effects may vary from person to person.

A person's reaction depends on several things, including individual health, heredity, previous exposure to chemicals including medicines, and personal habits such as smoking or drinking. It is also important to consider the length of exposure to the chemical; the amount of chemical exposure; and whether the chemical was inhaled, touched, or eaten.

CAN A MEDICAL TEST DETERMINE EXPOSURE TO VINYL CHLORIDE?

Vinyl chloride can be found in urine and body tissues after recent exposures. However, test results may not accurately reflect the level or duration of the exposure, or predict future health effects. Function tests of bone marrow, liver, kidney, and nerves may be useful in determining the effects of vinyl chloride exposure.

Seek medical advice if you have any symptoms that you think may be related to chemical exposure.

This fact sheet summarizes information about this chemical and is not a complete listing of all possible effects. It does not refer to work exposure or emergency situations.

FOR MORE INFORMATION

- Poison Control Center, 800-222-1222
- Your local public health agency
- Division of Public Health, BEOH, 1 West Wilson Street, Rm. 150, Madison, WI 53701-2659, (608) 266-1120 or Internet: <http://dhfs.wisconsin.gov/eh>



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